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INTELLIGENCE MEMORANDUM

DEVELOPMENTS IN FORESTRY AND FOREST PRODUCTS
IN THE SOVIET BLOC, 1953

CIA/RR IM-394

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FOREWORD

It is not intended that this memorandum be a definitive study of the timber industry in the Soviet Bloc. Discussion and analysis are therefore confined to the most significant developments in forestry and forest products in the Soviet Bloc during 1953 and the first quarter of 1954.

Many of the numerical data appearing in this memorandum do not represent measured or weighed quantities. They are estimates and approximations based on an appraisal of all available information. The range of error is generally within the range of plus or minus 5 percent.

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DEVELOPMENTS IN FORESTRY AND FOREST PRODUCTS
IN THE SOVIET BLOC, 1953*

Summary

As the economy of the Soviet Bloc** continued to expand during 1953, the need for wood and wood products increased. Supplies of wood ready for use, however, were inadequate, even though the total 1953 production of timber*** in the Bloc amounted to an estimated 485 million cubic meters, a considerable increase over the total 1952 production of 473 million cubic meters. The 1953 production consisted of 272 million cubic meters of industrial wood**** and 213 million cubic meters of fuelwood.*****

The USSR produced about 79 percent of the total industrial wood and about 80 percent of the total fuelwood of the Soviet Bloc. The European Satellites produced 40 million cubic meters of industrial wood and 28 million cubic meters of fuelwood, and Communist China produced the remainder — 17 million cubic meters of industrial wood and 15 million cubic meters of fuelwood.

After World War II the timber industry in the USSR consistently lagged behind the other sectors of the economy. It failed to meet production goals and, consequently, acted as a brake on those sectors which depend on wood for construction and operation.

Communist China continued to increase production of timber by means of large investments that opened up new forest areas. Based on plan fulfillment claims in 1952 and goals for 1953, production of industrial

* The estimates and conclusions contained in this memorandum represent the best judgment of the responsible analyst as of 1 July 1954.

** Soviet Bloc as used in this memorandum includes the USSR, Communist China, Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Rumania.

*** Total production of timber is defined as total output of all roundwood.

**** Industrial wood is all wood not used as fuel -- sawlogs, pitprops, pulpwood, and the like.

***** Fuelwood is all wood used as fuel.

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wood is estimated to have increased from 12 million cubic meters in 1952 to about 17 million cubic meters in 1953. It is estimated that the output of industrial wood will reach from 18 million to 22 million cubic meters in 1954. Increasing construction throughout Communist China will emphasize the necessity for adequate supplies of building timber.

The European Satellites are continuing a high level of forest exploitation. Estimated output of industrial wood in 1953 was 40 million cubic meters, 59 percent of the total output of timber. It is estimated that production of industrial wood in 1954 will be from 42 million to 44 million cubic meters; the emphasis will be on construction timber. Shortages of certain wood products, however, have plagued many of the Satellites. East Germany, for example, has suffered from shortages of pitprops and railroad crossties.

Soviet Bloc trade in wood and wood products consists largely of imports and exports by the USSR. The major Soviet import factor in 1953 was an estimated 1.55 million cubic meters (roundwood equivalent*) of wood from Finland, and total Soviet exports during that year were about 1.6 million cubic meters. Increasing internal needs for wood and wood products will probably keep Soviet exports in 1954 to approximately the 1950-53 level, some 1.7 million cubic meters, unless it would be advantageous politically or economically for the USSR to increase exports.

Production of industrial wood in the USSR, according to the original plan, is scheduled to reach an estimated 253 million cubic meters in 1955. Planned production for 1954 is 16.7 percent greater than 1953 production, which would mean about 251 million cubic meters in 1954 -- close to the 1955 goal. Labor difficulties and inefficient use of equipment make it unlikely that the goal will be attained.

Probably the most vulnerable component of the Soviet timber industry is labor. In some areas, from 60 percent to 80 percent of all timber workers are political, criminal, or war prisoners. Living and working conditions in the free-labor logging camps, including those operated by the Ministry of Timber Industry, have been little better than conditions in the prison camps.

* Roundwood equivalent is derived by conversion of the various end products of wood back to the raw material (roundwood) used in their manufacture. For example, 1 metric ton of newsprint is equivalent to about 3 cubic meters of roundwood.

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Long-range afforestation projects continue to receive much attention in the European Satellites and Communist China, despite what appears to be a curtailment of such projects in the USSR.

Development of natural cork in the USSR and Communist China and synthetic cork in the European Satellites indicates an effort by the Soviet Bloc to become as nearly self-sufficient as possible in cork, a highly strategic commodity. The decline of Soviet cork purchases in the Mediterranean area in 1953 may be a reflection of the development of internal production of cork or an indication that reserves of cork are considered sufficient.

I. Introduction.

The timber industry of the Soviet Bloc was particularly hard hit by World War II. Damage from military operations, wartime overcutting, and general disregard of forest management resulted in widespread forest devastation. Logging installations and wood-processing facilities in the areas of actual military operations were largely destroyed.

Large quantities of timber were needed for reconstruction after the war, and intensive efforts were made to meet the demands. The estimated total timber production of the Bloc rose from a pre-World War II level of about 410 million cubic meters to 440 million cubic meters in 1946 to about 480 million cubic meters in 1953. Output of fuelwood declined after the war from an estimated pre-World War II level of 255 million cubic meters to about 220 million cubic meters in 1953. These shifts in production reflected the increased use of more efficient fuels and need for diversion of increased supplies of wood to nonfuel use.

Industrial wood output in the Soviet Bloc increased from a pre-World War II level of 155 million cubic meters to 272 million cubic meters in 1953. The 1953 output of industrial wood was achieved in some areas by continued overcutting of forest reserves. This was particularly true in some of the European Satellites and in some parts of European USSR. In other areas, forests that had been previously inaccessible were opened up for exploitation.

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Throughout the Soviet Bloc, attempts are being made to reach a high level of forest utilization with the greatest possible cut and the least possible waste. Deforested areas are being replanted, and afforestation is being pushed in the European Satellites and China. Greater efficiency in processing will be stressed in order to increase supplies of finished products.

Since potentialities in each of the Soviet Bloc areas differ, the USSR, the European Satellites, and Communist China will be considered separately in this memorandum.

II. USSR.

A. Organization and Key Personnel.

In March 1953, in line with other ministerial changes, the Ministry of the Timber Industry and the Ministry of the Paper and Wood Processing Industry were merged to form the Ministry of the Timber and Paper Industry, which was responsible for the felling and transport of roundwood from the forests and the fabrication of wood products. In April 1954 the Ministry of the Timber and Paper Industry was separated into the Ministry of the Timber Industry and the Ministry of the Paper and Wood Processing Industry.

Although the primary consideration for the combination of timber and paper and other ministries appears to have been a move by Stalin's heirs to strengthen their control over the USSR, the consolidation was not illogical. Timber and paper are closely linked, since the timber industry is the source of supply of the major raw material used by the paper industry. In fact, the two have been joined and separated a number of times since their creation, having been separated in 1940, joined in 1948, and separated again in 1951.

In April 1954, 13 months after the combination in March 1953, the Ministry of the Timber and Paper Industry was again split. G. M. Orlov resumed the post of Minister of the Timber Industry. Fedor Dmitriyevich Varaksin became Chief of the Ministry of the Paper and Wood Processing Industry. There is little in Varaksin's background, except long service as a Deputy Minister of the Ministry of the Timber Industry, to suggest why he was selected for his present position.

Although the final outcome is still not clear, the possibility of a shakeup in the high command of the Ministry of the Timber Industry

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must be considered, since a high-level change would probably affect the production of the ministry. How G. M. Orlov, Minister of the Timber Industry, has managed to remain in his post so long is difficult to explain. His ministry has been severely criticized in press and radio year after year for failure to fulfill its plans and for failure to provide the nation with needed raw materials. Orlov has personally been the target for much criticism.

The consolidation in March 1953 provided an ideal opportunity to oust Orlov; not only did he keep his position, however, but in April 1953 he received his second Order of Lenin, the nation's highest award. It was speculated that Orlov was a member of the Beriya faction, since he had come up from the former NKVD.* Orlov nonetheless remained after Beriya's execution and is still Minister of the Timber Industry after the separation in April 1954 of timber and paper.

B. Production.

In 1953, the USSR was responsible for about 79 percent of the total timber production of the Soviet Bloc, an estimated 385 million cubic meters,** compared to an estimated Bloc total of 485 million cubic meters. The USSR accounted for about 79 percent of the total Bloc industrial wood output and for about 80 percent of total Bloc fuelwood output in 1953. The USSR (present boundaries***) with its vast forest reserves will continue to be the major Bloc producer and in the long run may well become the major source of raw material for the woodworking industries of the rest of the Bloc.

Strenuous efforts have raised production of industrial wood in the USSR from 80 million cubic meters in 1946, to an estimated 215 million cubic meters in 1953. Production is estimated to have increased nearly 11.4

* Orlov was awarded his first Order of Lenin, 30 April 1943, for his work as Chief of the Soviet Chief Directorate of Industry Construction (Glavpromstroy) of NKVD.

** See Appendix A, Methodology for the derivation of production estimates.

*** Soviet present boundaries include the boundaries of 1938 plus the territories subsequently acquired from Finland, the Baltic States, Germany, Poland, Czechoslovakia, and Rumania.

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percent above the 1951 level of 193 million cubic meters, or an average increase of about 5.7 percent per year. As a whole, the timber industry in the USSR has made great strides since the end of World War II. It has, nevertheless, acted as a brake upon the entire Soviet economy by its failure to provide the quantities of wood and wood products required for reconstruction in war-damaged areas and for the expanding civilian and military economies. Lack of wood has hampered both industrial and consumer construction. This lack has made implementation of the recent consumer goods and agricultural decrees, announced in the fall of 1953, extremely difficult.

The original goal of the Fifth Five Year Plan (1951-55) called for production of industrial wood amounting to an estimated 253 million cubic meters in 1955. By the middle of 1953 it was evident that the lagging rate of increase in wood production rendered it improbable that this goal could be attained. Press and radio criticism culminated in a decree on "the Liquidation of Lagging in the Timber Industry." 1/* Although the decree may have stimulated increased efforts in the fall of 1953, workers in the industry were still unable to meet the goals set up for that calendar year.

The reorganized Ministry of the Timber and Paper Industry fulfilled the 1953 gross production plan 93 percent. 2/ This percentage figure is, however, deceptive. In 1951 and 1952, timber and paper production were the responsibilities of two separate ministries, the Ministry of the Timber Industry and the Ministry of the Paper and Wood Processing Industry. Since the two ministries were reorganized and consolidated in March 1953, the 1953 figure includes gross production for both the timber and paper sectors. Fulfillment of the Ministry's 1953 timber output plan -- that is, the actual felling and haulage of timber -- is undoubtedly below 93 percent, probably in the high 80's. This seems a reasonable assumption in view of the criticism of the timber industry during 1953 and the underfulfillment of the 1953 plan for "transport of commercial (industrial) wood".**3/

* Footnote references in arabic numerals are to sources listed in Appendix B.

** The processing capacity and operation of woodworking plants of the timber industry do not appear to have been so much the cause of the difficulty as was the removal of the roundwood from the forest. The 1953 report on plan fulfillment emphasizes that the fundamental difficulty is getting the timber felled and out of the forest.

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On a gross plan basis, the high-value paper production (for which the 1953 plan was exceeded) 4/ would tend to offset somewhat the low timber production. Table 1 shows the gross plan production fulfillment for the years 1951-53, and indicates how this situation may have come about:

Table 1

Fulfillment of the Gross Production Plan for Timber and Paper
by Specified Ministries in the USSR 5/
1951, 1952, and 1953

<u>Ministry</u>	<u>Percent</u>		
	<u>1951</u>	<u>1952</u>	<u>1953</u>
Timber Industry	94	90	
Paper and Wood Processing	103	102	
Timber and Paper			93

In early 1954 the short-lived Ministry of the Timber and Paper Industry was again resolved into the Ministry of the Timber Industry and the Ministry of the Paper and Wood Processing Industry.

Of the total 1953 Soviet timber production of some 385 million cubic meters, industrial wood is estimated at 215 million cubic meters, or 56 percent, and fuelwood is estimated at 170 million cubic meters, or 44 percent. These estimates include output of large state producers, and local gathering by settlements and individuals.*

The Ministry of the Timber and Paper Industry was responsible (based on information available for previous years) for 40 percent to 55 percent of all wood felled and hauled according to state plans, or as much as 44 percent of the total 1953 production of 385 million cubic meters. The Ministry's failure to meet the 1953 goal brought severe

* Planned timber production figures published in the USSR usually do not include sizable quantities of wood, primarily fuelwood, gathered by cities, settlements, collective farms, and individuals for local and personal use.

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reprimands for high production costs, inefficient use of machinery, low productivity per labor unit which resulted in underfulfillment of consumer goods production, and failure to deliver enough additional goods for sale to the population.

Underfulfillment of logging plans is the result of a number of factors, of which low labor productivity is probably the most acute. Low labor productivity results in large part from the miserable living and working conditions which prevail in many of the logging camps of the timber industry. Housing, food, and clothing are inadequate, the pay is low, and the work is difficult and must be carried on in severe weather. Much of the felling and primary haulage has been done by slave labor (estimated to be as high as 60 percent to 80 percent in some areas) and by collective farmers drafted for work during slack agricultural seasons. The unattractive working conditions in the timber industry have made recruitment difficult, and have led to high labor turnover, thus creating still more inefficiency.

Attempts are being made by the timber industry to remedy these defects. Benefits granted by the Timber Decree to the timber workers are being publicized. Efforts are being made to organize logging along more efficient lines. How effective and widespread these efforts are is not yet known, but some positive results appear to have come from the new program in the first quarter of 1954. Because of growing demand for industrial wood for collective farms, housing, cultural and industrial construction, it is planned by the USSR to increase the output in 1954 16.7 percent above that of 1953. 6/ The proposed increase in production during 1954 (16.7 percent) is about triple the average rate of increase the past 2 years, 1952 and 1953 (an average of about 5.7 percent). If this plan were fulfilled, the 1954 output would be about 251 million cubic meters, close to the original goal of the Fifth Five Year Plan of 253 million cubic meters in 1955. There are several possible reasons why estimated 1954 output is so close to 1955 planned output. One explanation is that 1953 output, as used in this memorandum, is an overestimation. In that case, the 1954 output (after application of the 16.7-percent increase) would be substantially lower. Another explanation is that increased demands for wood have forced another upward revision of the 1955 goal. Nonetheless, the planned increase for 1954 appears to be unrealistic unless the timber industry planners are hoping that intensive and more efficient utilization of manpower and machinery will enable them to boost output to meet the goal. Judging by past performance, it is doubtful whether the proposed 1954 increase will be realized.

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C. Trade.

The timber export potential of the USSR has aroused as much speculation as timber production. European traders are particularly interested because Europe's timber balance up to World War II was closely related to European imports from the USSR and the Baltic States (Latvia, Estonia, and Lithuania).

During the mid-1920's, Bolshevik Russia, busy with internal problems, was replaced in the world's timber markets by Scandinavia, Poland, Rumania, and other countries. The internal situation was somewhat stabilized by 1929 and, needing money to finance the First Five Year Plan, the USSR re-entered the world market. The large-scale selling of the USSR (Table 2) was condemned as dumping in a deliberate attempt to upset the market. Western exporting countries were hard hit during the early years of the depression of the 1930's.

Table 2

Exports of Wood and Wood Products from the USSR
and the Baltic States
1929-33 a/ 7/

<u>Thousand Cubic Meters, Roundwood Equivalent</u>					
<u>Year</u>	<u>USSR</u>	<u>Baltic States b/</u>	<u>Year</u>	<u>USSR</u>	<u>Baltic States b/</u>
1929	13,740	4,920	1934	16,900	4,100
1930	17,700	4,350	1935	17,550	3,160
1931	15,400	2,690	1936	15,930	3,340
1932	14,710	2,180	1937	13,740	5,480
1933	16,270	3,620	1938	9,500	3,610

a. Table includes all wood products, lumber, plywood, pulp, paper, converted to roundwood measure.

b. Estonia, Latvia, Lithuania.

After World War II, demand for industrial wood to meet the needs of reconstruction and industrial expansion, coupled with the necessity

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of rebuilding the timber industry itself, kept the immediate postwar (1946-50) timber exports of the USSR (Table 3) to less than one tenth of the 1934-38 average (1.2 million cubic meters, roundwood equivalent).

Table 3

Exports of Wood and Wood Products from the USSR a/
1946-52

Thousand Cubic Meters, Roundwood Equivalent			
<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>
1946	500	1950	1,700
1947	1,000	1951	1,900
1948	1,200	1952	1,600
1949	1,400		

a. See Appendix A (Trade) Methodology.

In the early post-World War II period, the USSR was also receiving sizable quantities of wood, lumber, and plywood from Rumania, prefabricated houses from Finland and East Germany, and railroad crossties from East Germany.

Soviet imports of wood and wood products from Finland are at a high level, as indicated by trade agreements which list Finnish exports to the USSR as 1.55 million cubic meters (estimated roundwood equivalent*) in 1953 ^{8/} and 1.57 million cubic meters (estimated roundwood equivalent) in 1954. ^{9/}

In contrast to continuing imports are the offers of lumber and wood products being made by the USSR in trade negotiations. Denmark, Greece, Italy, and Belgium-Luxembourg, to mention a few, are to receive substantial quantities in 1954. The USSR has also agreed to ship wood and wood products to France, India, Egypt, and Iran, among others.

* See Appendix A, Methodology.

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Future Soviet timber export policy is tied to political and economic considerations. Certainly the USSR must export goods to obtain needed imports. Raw and semiprocessed goods are a logical export choice. Timber and grain are traditional export items of this type, and timber -- especially softwood -- is in demand in Western Europe.

Offers of wood for export were made at the Moscow Economic Conference in April 1952 by V. N. Nichkov, head of the Soviet timber export monopoly, EXPORTLES. The downward trend of prices at the time was probably the major factor in keeping Western importers from placing any large orders. Possibly as a result of these offers, rumors of Soviet plans to "dump" timber were current during the summer of 1952.

Production difficulties in the timber industry, combined with the increasing internal demand for wood and wood products, cause doubt as to the willingness, or ability of the USSR to resume timber exports on a pre-World War II (1931-38) level in the near future, unless great political or economic advantages could be gained by increased exports. Large quantities of wood might be offered on Western markets in exchange for strategic goods or consumer goods in very short supply; for example, pitprops and sawn softwood may be offered in exchange for UK textiles or other badly needed goods or machinery. Political and economic pressure can be put on Finland and other wood-exporting countries threatening large timber exports from the USSR.

In all probability, timber exports from the USSR in 1954 will not be much above the 1950-52 level. They will probably amount to about 1.7 million cubic meters, roundwood equivalent.

D. Consumer Goods Program.

The increased emphasis on the consumer goods program, as outlined in various decrees in the fall of 1953, stresses the role of the timber and paper industries in supplying the wants of the Soviet population.

The primary responsibility of the timber industry is construction. This includes building of prefabricated houses and cold storage units, and the supply of wood for the construction of houses, apartments, shops, restaurants, warehouses, and factories that produce consumer goods. Of great importance, too, is the timber necessary in agriculture for the construction of such things as farm houses, barns, livestock shelters, and hothouses.

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The timber and paper industries contribute even more directly to the consumer goods program with fabrication of furniture, packaging materials, and other "direct use" consumer goods. The importance of wood in the consumer goods program cannot be underestimated, and a number of complaints have been made against the timber industry for not fulfilling its obligations to this sector of the economy.

One phase of the consumer goods program which is often overlooked is the importance of packaging materials which are largely wood products. The decrees on food, consumer goods, and internal trade all stress the need for increased supplies of attractive packaging materials of good quality. No known estimate of production and consumption of packaging materials has ever been made for the USSR, either in physical or value units. It is doubtful whether a reasonable estimate could be made, since packaging materials are produced and used by almost every sector of the economy.

Perhaps the greatest single consumer goods user of packaging materials is the food industry, and it is in this industry that great emphasis is to be put on the "new" Soviet economy. The transportation and distribution of food, even when bulk packed, requires large amounts of wood, metal, glass, and paper for containers and crating. A rise in use of packaging materials by the various branches of the food industry will follow the planned rise of food production.

Increasing the supply of packaging creates a number of problems. A shortage of wood for items like barrels, boxes, and crates may require diversion of additional quantities from construction and defense. Production of paper may be another bottleneck. Production of the quality papers and containers demanded by the decrees may not be possible, even though plans call for the Ministry of the Timber and Paper Industry to double its 1953 output capacity by 1957 for special types of paper and cardboard 10/ for the food industry. The conflict between civilian consumption of packaging and military requirements for packaging is still another problem which the USSR must solve.

E. Afforestation.

Since Stalin's death in March 1953 and the subsequent reorganization of the government, little mention has been made of afforestation in the USSR. Presumably, after a large investment in the afforestation of about 2.6 million hectares, 11/ the "Stalin Plan for the Transformation of Nature" was dropped along with the Turkmen Canal and other ambitious projects.

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The "disappearance" of the shelterbelt project has led to speculation that plans for afforestation have been abandoned completely. A few bits of information, however, have appeared since March 1953, indicating that some portions of the work are still going on. It is quite possible that the USSR is now concerned chiefly with the maintenance of existing belts. Complete cessation of all afforestation activity would certainly lead to some reference to disposal of machinery, closing of forest nurseries, and transfer of personnel.

The immediate economic significance of curtailment of afforestation efforts would be the release of machines such as tractors, plows, and cultivators, and the release of manhours for use in other fields, primarily agriculture and the timber industry. It can be concluded that with the lack of skilled labor in the timber industry and agriculture, machine operators and technicians may be shifted to those sectors.

F. Cork.

Until quite recently, the USSR was believed to be almost wholly dependent upon the Mediterranean area for supplies of cork. Evidence which appeared during 1953 confirms the belief that the USSR has developed internal supplies of cork which will reduce its dependence on sources outside the Bloc.

The USSR is particularly interested in adequate cork supplies. In wartime, cork is a strategic commodity because of its many uses for which no completely satisfactory substitutes have been found, such as gaskets, oil-immersion, friction drives, friction clutches, washers, grease retainers, and certain types of insulation. "Attempts by the Soviets in 1948 to substitute cardboard for cork composition gaskets, washers, and seal retainers proved unsuccessful" ^{12/} because the cardboard could not withstand the permeating action of oil.

The Russians have experimented for over a century, attempting to establish cork oak (Quercus suber) in the Crimea (Economic Region III) and along the Black Sea littoral in the North Caucasus (Economic Region IV), and Transcaucasus (Economic Region V), but in spite of all efforts, plantings have been insignificant.* While the cork oak of the Mediterranean has been the principal commercial source of cork, a few

* In 1953 small quantities of Mediterranean oak cork were harvested from a small plantation at Khosta on the Black Sea. ^{13/}

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other species have layers of cork cells which are thick enough for commercial exploitation. One of these, the "Amur Velvet Tree" (phellodendron amurense) is found in the Soviet Far East (Economic Region XII).

Indications have appeared since 1945 that the USSR was attempting commercial exploitation of this source in the Far East. A factory was built in Khabarovsk in 1944 14/, which was to use local supplies of cork. The first lot of insulating cork slabs were to be shipped from this factory on 5 January 1945 to the shipbuilding and refrigeration industries. References to production of cork from the "Amur Velvet Tree" have appeared since the end of World War II, and available reports indicate that fairly large-scale commercial exploitation was in progress by mid-1953.

Attempts are being made to expand the industry and to put it on a permanent base. References to "extensive research on cultivation," organization of special Leskhozes for growing Amur cork trees, and establishment of new plantations 15/ indicate expansion. Reference to the care required in the removal of the bark so that the tree will not be injured, and mention of new growth in 5 years 16/, indicate the desire of the USSR to establish a stable, internal source of supply.

The cork supply of the Far East (Economic Region XII) is of importance to the entire USSR. Products are sent "to every part of the Soviet Union". 17/ The bulk of the Far East cork production is used for grinding. The ground corkwood slabs are then used throughout Soviet industry, particularly for insulation purposes.

Total known shipments of cork from the Mediterranean to the USSR, averaged 4,632 tons per year, 1945-49. In 1950, imports jumped to 11,698 tons. Known direct imports in 1951 totaled 12,967 tons, and in 1952 totaled 15,057 tons.

It may be pure coincidence, but as references to Amur cork have increased since 1952, known direct Soviet imports of cork from the Mediterranean have decreased. Known direct imports in 1953, based on preliminary statistics, amounted to 9,397 tons or a decline of 37.6 percent from the peak year of 1952. Soviet cork imports from Portugal, which has been the main supplier to the USSR, show a decline from 11,468 tons in 1951 and 11,765 tons in 1952 to 6,647 tons in 1953.

It is possible, however, that direct Soviet cork imports from the Mediterranean in 1954 will reach the 1951-52 level, indicating that

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the drop in 1953 was only temporary. It must also be considered that the USSR may have curtailed direct imports in favor of transshipments through the European Satellites and other countries.

Continued decrease of Soviet cork imports may mean that stockpiles have reached desired levels, or -- as has been speculated -- that the USSR has developed internal cork sources which have lessened its vulnerability to Western trade controls.

III. European Satellites.

A. Production.

Eastern Europe, which prior to World War II sent large quantities of wood to Western Europe in exchange for manufactured goods, has struggled to reach prewar output levels.* War damage to forests, logging equipment, and processing facilities has hampered attainment of production goals. Excessive reparations and import requirements levied against many of the Satellites by the USSR in the period following World War II, made overcutting necessary in a number of forests. Recent information indicates that some overcutting is still taking place.

Intensive exploitation of the forests in the European Satellites, which account for an estimated 14 percent of total Bloc timber production, has continued at a steady rate for the past 3 years (1951-53). Estimated total timber production rose from 66 million cubic meters in 1952, to 68 million cubic meters in 1953.**

Industrial wood output in the European Satellites amounted to an estimated 40 million cubic meters in 1953 compared to some 38 million cubic meters in 1952. Estimated fuelwood output remained fairly steady, with about 28 million cubic meters output in 1952 and 28 million cubic meters in 1953.**

Preliminary estimates for 1954 put total timber production at 70 to 72 million cubic meters or 3 percent to 6 percent above 1953. Industrial wood output is estimated at 43 to 45 million cubic meters,

* Pre-World War II level estimated to be roughly 63 million cubic meters, present boundaries.

** See Appendix A, Methodology, for derivation of production estimates in this section.

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and fuelwood output will probably decrease slightly to 27 to 29 million cubic meters. The major Satellite producers are Poland, Rumania, and East Germany. Hungary has few forest reserves and is a net importer of wood and wood products.

In the short run, no substantial decrease in production in the European Satellites is foreseen during 1954. Fuelwood production will tend to decrease slightly as more wood is diverted to industrial purposes and as more efficient fuels come into use. European Satellite forest reserves were decreased by loss of forested areas to the USSR. Continued depletion of existing forest reserves, with annual cuts exceeding annual growth, will limit long-run exploitation. Reforestation of cutover areas, despite Communist claims to the contrary, is believed to be inadequate.

Shortages of wood and wood products have plagued various Satellite nations since the end of World War II. For example, East Germany has suffered from shortages of pitprops, 18/ railroad crossties, 19/ and high-grade lumber for shipbuilding. 20/ Wood packaging materials 21/ and pitprops 22/ have been scarce in Hungary. Fuelwood supplies in Rumania have been inadequate. 23/ Attempts are being made to stretch available industrial wood supplies by more efficient methods of processing, less waste in utilization, and use of substitutes.

B. Afforestation.

Afforestation in the Satellites, as in Communist China, appeared to continue unabated during 1953. Apparent curtailment of afforestation projects in the USSR seems to have had little effect on Satellite efforts. These afforestation programs, which require investment in manpower, money, and -- in many instances -- machinery, and which will furnish little or no immediate economic benefit, would appear to be a luxury to any country actively preparing for all-out war.

C. Cork.

In 1953, Czechoslovakia announced the successful development of a synthetic cork, which -- the Czechs claim -- will end their dependence on Western sources. 24/ Although the effect on Satellite imports of cork is not yet clear, development of cork substitutes in the Satellites fits in with efforts of other members of the Bloc to reduce dependence on the West for this strategic material.

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IV. Communist China.

A. Production.

The supply of wood in China is insufficient in terms of the demand, and planned allocation to different uses requires careful assessment by the state planning mechanism. Wood substitutes, such as bamboo, have been extensively used, and lower priority uses, such as private housing, have had to do without wood in many cases. The demand for wood in Communist China continued to increase during 1953. The major demand was for wood in the construction industry, although demand for mine timbers, railroad and communication uses, and pulp were also of importance.

The present regime in China is making intensive efforts to put all available forest reserves under proper forest management and at the disposal of the country. During 1953 there were a number of references to the progress being made by forest resource survey teams. Survey teams have been expanded. In Northeast China, the number of forest surveyors rose from some 300 in 1950 to 2,000 in 1952. 25/ A total of 38 survey teams, including an aerial survey unit, are now at work. 26/ In the last 3 years, major surveys have been undertaken in the Changpai Mountain Range, the Great and Small Khingan Mountain Ranges in Northeast China, the Pailung River area in South Kansu Province, and in districts south of the Yangtze River. 27/ The total area of forest land, surveyed from 1949 to the end of 1953, was to reach 10 million hectares. 28/ By the end of 1953, 8 million hectares were to have been surveyed for afforestation projects. 29/ Surveys were primarily concerned with measurement of forest areas and calculation of volume of standing timber. Potential shelterbelt areas were also marked out. References indicate that in 1954, intensive surveys will again take place in the Khingan Mountain Ranges. 30/

Wood production statistics for Communist China are not reliable, and estimates of production are subject to a wide range of error. Total timber production for 1953 is estimated to be 31.66 million cubic meters, of which 16.66 million cubic meters are estimated to be industrial wood and 15.0 million cubic meters are fuelwood.*

Industrial wood output for 1952 rose 11 percent over 1951 to an estimated 11.9 million cubic meters, as compared with an estimated 10.7 million cubic meters in 1951. Industrial wood output in 1953 was

* See Appendix A, Methodology for derivation of these and other production estimates in this section.

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planned to be 40 percent over 1952, and the 1953 estimate of 16.66 million cubic meters is based on that percentage. Whether this increase was accomplished in 1953 is not known, but references 31/ during 1953 to overfulfillment of production plans indicate that results were close to the goal.

The preliminary estimate for 1954 puts industrial wood output between 18.0 and 22.0 million cubic meters. The timber industry in 1954 will probably show a sizable increase in production over 1953 but will still be pressed to meet the requirements for construction as well as for other uses. Increases in industrial wood output will come about as a result of opening up new forest areas for exploitation and closer utilization of wood supplies.

Aid has been given by Soviet experts in the development of the timber industry, not only in logging, but in wood-processing as well. 32/ Logging equipment from the USSR is beginning to be used by the Chinese. 33/

Because wood as a raw material has been scarce, only the most essential items were made of wood. The present emphasis on construction, particularly construction of factories and railroads, has forced the Chinese to increase timber production to meet requirements. It is estimated that as much as 85 percent of all industrial wood, some 14 million cubic meters, is used in some form of construction. References to timber felling and haulage during 1953 almost invariably mentioned that the wood was to be transported to various construction sites throughout the country. A few references to wood for consumer uses have been made. In Northeast China, peasants were being supplied with timber to build new homes, carts, and farm tools.

Wood is still not plentiful enough, and efforts are being made to conserve supplies by use of substitutes and curtailment. For example, in February 1953, all match factories in China were notified by the Ministry of Light Industry to shorten match sticks by 10 mm to a new length of 40 mm in order to save wood. 34/ Reference has been made to the substitution of jute-reinforced cardboard boxes for wooden packing boxes as a money-and lumber-saving measure. 35/ A treating plant for railroad crossties, the first plant of its kind in Communist China, was completed in mid-December 1953, and trial operations are scheduled for 1 May 1954. 36/

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B. Afforestation.

Afforestation in Communist China during 1953 appeared to continue without slackening. Almost 600,000 hectares were afforested in the first half of 1953, a 62 percent greater area planted than in the first half of 1952. 37/ In contrast to the USSR, where references to afforestation dwindled to almost nothing after Stalin's death, China has continued to publicize afforestation projects.

In late summer of 1953 the first mechanized afforestation experiment station in China was set up in Heilungkiang Province to speed up completion of shelterbelt planting. Technicians will be trained at the station, and machine planting methods were to be used experimentally in October 1953. 38/

The immediate economic significance of wood supplies from afforestation projects will be limited to small quantities of fuelwood. Effects of shelterbelts on flood and erosion control will probably not be apparent for at least 5 years.

C. Cork.

Paralleling Soviet attempts to become self-sufficient in cork, Communist China began efforts to develop internal supplies. Two species have been mentioned, an oak (Quercus variabilis) and the "Amur Velvet Tree" (phellodendron amurense). (The latter is also being exploited by the USSR). Surveys were made during 1953 in south Shensi and eastern Kansu Provinces and along the Min River in Fukien Province. 39/ Sixty tons of oak bark were reported as collected in Shensi and Kansu and transported to seaports for export.* 40/ Exploitation of oaks in south Anhwei Province is also reported. 41/

A mid-June 1953 report stated that China's first cork factory was in operation in Mukden producing cork-board for refrigeration units. Cork from the Amur cork tree, found in forest areas of Northeast China, is used as raw material. The same report mentions the fact that China had previously imported all cork. 42/

* No indication given as to destination.

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APPENDIX A

METHODOLOGY

1. USSR.

a. Production.

The year 1940 is the "prewar" year commonly referred to in Soviet timber statistics. Industrial wood production for that year is given in various sources as 113.0 million cubic meters, 43/ 113.1 million cubic meters, 44/ 117.9 million cubic meters, 45/ 119.0 million cubic meters 46/ (by application of a published percentage increase planned for 1950 in comparison with 1940). This last figure has been accepted as representing 1940 industrial wood production for the USSR, present boundaries. It is believed that the lesser figure (113 million cubic meters) does not include production in the territories acquired by the USSR from Poland, Germany, Czechoslovakia, and the Baltic States.

Planned industrial wood production for 1950 was to have been 190 million cubic meters. 47/ However, actual output for 1950 was only 36 percent above 1940, 48/ some 162 million cubic meters. Industrial wood production* in 1951 was reported to be 117 percent compared with 1950. 49/ Some 3 million cubic meters, representing local production by cities, settlements, and collective farms were added, making estimated 1951 production close to 193 million cubic meters.

The severe criticism of the timber industry in press and radio during 1952 and 1953, coupled with the fact that annual gross production plans of the Ministry of the Timber Industry in 1952 and of the Ministry of the Timber and Paper Industry in 1953 were quite low, 90 and 93 percent, respectively, tends to confirm speculation that rate of increase in production had slowed appreciably. Industrial wood production for 1952 is estimated to have been 205 million cubic meters, 50/ and using the same rate of increase, to have been about 215 million cubic meters in 1953.

* Referred to as "timber." The report for the previous year, however, refers to "commercial timber." It has been assumed that the category for 1951 is the same as 1950.

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Original plans for 1955 called for a 56-percent increase in production over 1950. ^{51/} Using 162 million cubic meters as the 1950 base, 1955 planned output of industrial wood would be somewhere in the neighborhood of 253 million cubic meters. As has been stated in the text, 1954 output is to be increased 16.7 percent above 1953, which if fulfilled, would put 1954 production close to 251 million cubic meters. It is interesting to note that the planned increase for 1954 (16.7 percent) is just a few tenths of a percent less than the increase reported for 1951 (17 percent).

The Fifth Five Year-Plan (as did the 5 year plans preceding it) called for a shift of logging and wood-processing facilities from the depleted forests of the western and central regions of the USSR to the more plentiful timber resources of the north and east. In addition to labor and equipment difficulties, geographical shifts in production (if such shifts have actually taken place) have hindered fulfillment of logging plans.

b. Trade.

(1) Table 2: Principal source used for the years 1946-47 was ^{52/}. These 2 years were rounded to 500,000 cubic meters and 1 million cubic meters, respectively. Data for the years 1948 and 1949 represent arbitrary figures selected on the basis of best available evidence as representing a continuation of the trend suggested by data for 1946-47 and 1950-52.

Principal sources for the years 1950-52 are given in sources ^{53/}. These sources give trade data for the main wood importing and exporting countries outside the Soviet Bloc. Export data for the USSR were derived by totaling imports from the USSR, as reported by the major non-Communist wood importing countries, and by adding to these figures arbitrary quantities representing Soviet exports to minor non-Communist countries and to other countries of the Soviet Bloc.

(2) Finnish exports of wood to the USSR: The following factors were used to convert one measured unit of the listed products to cubic meters, roundwood equivalent:

Prefabricated houses 1 square meter floor space equals 0.45 cubic meter.

Sawnwood, 1 cubic meter equals 1.67 cubic meters.

Pulpwood, 1 cubic meter equals 0.75 cubic meter.

Firewood, 1 cubic meter equals 0.70 cubic meter.

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Viscose Cellulose, 1 metric ton equals 5.00 cubic meters.
Paper, 1 metric ton equals 3.65 cubic meters.
Paper board, 1 metric ton equals 1.80 cubic meters.

2. European Satellites.

Total timber production, industrial wood and fuelwood production for 1952 was stated in source 54/. For the most part, production statistics for the various European Satellites have been based on official statements of each of the countries, both actual and planned figures. As indicated in the text of this memorandum, it is believed that fuelwood production will decline with the advent of more efficient fuels and the diversion of quantities of wood to industrial purposes, and that demand for industrial wood will remain steady, keeping output at about the present level, or slightly higher. The estimates as given in the text reflect these assumptions.

3. Communist China.

Because the forests of the Northeast and Inner Mongolian Regions (Manchuria) constitute the largest timber reserves of Communist China, and because a large portion of total industrial wood production will originate there, the basic assumption is made that timber production in these regions represents the major percentage of all Chinese Communist production. It is realized that such an assumption is liable to error, but it is felt that because production data exist for these two regions (even though sketchy), and because data for the rest of Communist China are almost entirely lacking, that the approach is reasonable.

Based on available references, it was determined that 1951 output in the two specified regions was in the neighborhood of 7.8 million cubic meters. Production goals for 1951 in various regions in terms of percentages of the national total, were as follows 55/:

<u>Region</u>	<u>Percentage</u>
Northeast	65.9
Inner Mongolia	6.9
Central South China	14.5
Southwest	8.5
Northwest and Shansi	negligible

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If, in 1951, the Northeast and Inner Mongolian Regions were to account for 72.8 percent of total Communist China production, then total output may have been near 10.7 million cubic meters. Using 1951 as a base, 1952 output (reported as 11 percent over 1951) would be 11.9 million cubic meters, and 1953 output (planned to be a 40-percent increase over 1952) would be about 16.66 million cubic meters.

Fuelwood production (more of an approximation than an estimate) is a continuation of data as stated in source 56/.

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APPENDIX B

SOURCES AND EVALUATION OF SOURCES

1. Evaluation of Sources.

Data relating to production and utilization are CIA estimates which for the most part are based on official statements of the country concerned. Data relating to trade are CIA estimates based on official trade statistics of the country concerned as published by the Food and Agriculture Organization of the United Nations and the US Department of State.

2. Sources.

Evaluations, following the classification entry and designated "Eval.", have the following significance:

<u>Source of Information</u>	<u>Information</u>
Doc. - Documentary	1 - Confirmed by other sources
A - Completely reliable	2 - Probably true
B - Usually reliable	3 - Possibly true
C - Fairly reliable	4 - Doubtful
D - Not usually reliable	5 - Probably false
E - Not reliable	6 - Cannot be judged
F - Cannot be judged	

Evaluations not otherwise designated are those appearing on the cited document; those designated "RR" are by the author of this report. No "RR" evaluation is given when the author agrees with the evaluation on the cited document.

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